



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,083	12/27/2001	Yasuo Suda	1232-4805	8500
27123	7590	05/05/2005	EXAMINER	
MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			LAM, HUNG H	
			ART UNIT	PAPER NUMBER
			2615	

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/033,083	SUDA, YASUO	
	<b>Examiner</b>	<b>Art Unit</b>	
	Hung H. Lam	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)     | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Specification*

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Inuiya et al (US-6,882,364).

With Regarding to **claim 1**, Inuiya discloses an image sensing apparatus comprising a plurality of image sensing units for receiving an object image via different apertures (Figs. 6-

Art Unit: 2615

8,60; Col. 10, Ln.18-25; Col. 38, Ln. 51-57; each of aperture “AP” is interpreted as an image sensing unit; Inuiya further teaches a more detail optics system in Fig. 60 wherein the iris 111a inherently generates different apertures in order to regulate the light entering image pickup 51b),

wherein said plurality of image sensing units are arranged such that images of an object at a predetermined distance are received as they are shifted a predetermined amount from each other in at least the vertical direction (Col. 10, Ln. 29-35), and

wherein said plurality of image sensing units have filters having different spectral transmittance characteristics (Fig. 6; Col. 10, Ln. 16-18; each color filters include one of R,G, or B color filters).

With regarding to **claim 2**, Inuiya discloses the apparatus further comprising a plurality of image forming optical-systems for forming images of object light (Fig. 60; Col. 38, Ln. 50-55; Col 38, Ln. 63-67; first optic system includes lens 110a, iris 11a, shutter 112a and the second optic system includes numerous RGB color filters corresponding to a plurality of image sensing units AP), entering via said different apertures, onto said plurality of image sensing units (Col. 38, Ln. 55-58; iris 111a inherently generates different apertures and combines with shutter 112a to regulate the quantity of light entering the photo sensitive section 111b).

With regarding to **claim 3**, Inuiya discloses the apparatus wherein said plurality of image sensing units are arranged such that images of an object at a predetermined distance are received as they are shifted a predetermined amount from each other in the horizontal direction (Col. 10, Ln. 29-35; objects must be located at a predetermined distance in order for the image sensing units to be able to captures focus images).

With regarding to **claim 4**, Inuiya discloses the apparatus wherein said plurality of image sensing units are at least three image sensing units (Fig. 6 shows more than three image sensing units/ AP).

With regarding to **claim 5**, Inuiya discloses the apparatus wherein said plurality of image sensing units are at least three image sensing units which receive object images via said filters having different spectral transmittance characteristics (Col. 10, Ln. 16-25; Fig. 6 shows more than three image sensing units/ AP and each R,G, or B color filter CF is positioned in <sup>front</sup> ~~front~~ of photosensitive portions).

With regarding to **claim 6**, Inuiya discloses the apparatus according wherein said plurality of image sensing units are at least three image sensing units which receive object images via filters having green, red, and blue spectral transmittance characteristics (Col. 10, Ln. 16-25; Fig. 6 shows more than three image sensing units/ AP and each R,G, or B color filter CF is positioned in <sup>front</sup> ~~front~~ of photosensitive portions).

With regarding to **claim 7**, Inuiya discloses the apparatus wherein said plurality of image sensing units are formed on the same plane (see Fig. 6).

With regarding to **claims 8 and 9**, Inuiya discloses the apparatus wherein said plurality of image sensing units are area sensors (Figs. 7-8) by which images of an object at the predetermined distance are received as they are shifted at a pitch of a 1/2 pixel in the vertical/horizontal direction (Col. 10, Ln. 30-35; objects must be located at a predetermined distance in order for the image sensing units to be able to captures better images).

*Conclusion*

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Suzuki (US-6,426,773) discloses an image pickup device including horizontal and vertical pixel shift mechanism and a diaphragm which generates number of apertures in response to the regulated diaphragm.

b) Kawajiri et al. (US-6,822,682) disclose solid state image device with micro-lens wherein the read method shifts by half pixels in horizontal and vertical direction.

c) Howell (US-6,570,613) disclose a resolution-enhancement method which pixels are shifts by  $\frac{1}{2}$  pixel-pitch in vertical or horizontal direction.

d) Osada et al. (US-2001-0,024,237) disclose an solid-state honeycomb type image pickup that shifts pixels by half pixel pitch.

e) Tangen et al. (US-6,765,617) disclose an optoelectronic camera with multiple micro-lenses.

Art Unit: 2615


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung H. Lam whose telephone number is 571-272-7367. The examiner can normally be reached on Monday - Friday 8AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's primary, NGOC YEN VU can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

04/25/05

HL



NGOC-YEN VU  
PRIMARY EXAMINER